

DOCKET NO.: MSFT-0579/167505 02
Application No.: 09/934,071
Office Action Dated: June 15, 2004

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Christopher B. Weare **Confirmation No.:** 7351
Application No.: 09/934,071 **Group Art Unit:** 2177
Filing Date: August 20, 2001 **Examiner:** Debbie M. Le
For: **SYSTEM AND METHOD FOR PROVIDING ADAPTIVE MEDIA PROPERTY CLASSIFICATION**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION PURSUANT TO 37 C.F.R. 1.131

I, Christopher B. Weare, declare and say that:

1. I am the sole inventor of the invention described and claimed in U.S. Patent Application No. 09/934,071 (the above-identified application, hereinafter "the '071 application"), which was filed with the United States Patent and Trademark Office on August 20, 2001.
2. I understand that U.S. Provisional Application No. 60/216,423, filed on July 6, 2000, is the priority application to which the '071 application claims priority.
3. As sole inventor, I am familiar with the '071 application and the associated rejections alleged in the outstanding Official Action, dated June 15, 2004. I am also familiar with the references cited by the United States Patent and Trademark Office in connection with the outstanding Official Action, including U.S. Patent Application Publication No. US 2003/0014407 A1 (hereinafter "Blatter") and U.S. Patent No. 5,918,223 (hereinafter "Blum").

4. In particular, I understand that claims 1-15, 18-35 and 38-40 of the above-identified patent application were rejected under 35 U.S.C § 103(a) over Blatter and Blum.

5. I understand that Blatter was filed on April 11, 2002 and, as far as I am aware, is still pending before the U.S. Patent & Trademark Office.

6. I understand that Blatter claims priority to U.S. Provisional Application No. 60/282,885, filed on April 11, 2001, and while I have not examined the content of U.S. Provisional Application No. 60/282,885, I understand that April 11, 2001 is thus the earliest possible effective date to which the Blatter reference may be entitled.

7. In accordance with 37 CFR § 1.131, as inventor of the subject matter of the rejected claims, and without conceding the propriety of the outstanding rejections, I hereby declare that I invented the subject matter of the rejected claims prior to April 11, 2001, the earliest possible effective date of the Blatter reference, and thus I am the prior inventor as referred to in that Section.

8. In particular, I am the prior inventor because I conceived of the invention represented by the rejected claims prior to April 11, 2001. Soon after my conception, with due diligence, on July 6, 2000, I constructively reduced the invention to practice by timely filing a provisional application with the United States Patent & Trademark Office to secure my patent rights.

9. As evidence of my prior conception, I made mention of the invention of the '071 application in a notebook (copies of the relevant notebook pages attached hereto) on May 25, 2000. The notebook pages were then signed and witnessed by a third party, Michael J. Carreno, currently a Microsoft employee.

10. Accordingly, it is my belief that the copies of the relevant pages from my notebook attached hereto evidence my possession of the invention described in the '071 application prior to April 11, 2001, thereby removing Blatter as an applicable reference.

11. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements were made with the knowledge that willful false

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PATENT

statements and the like so made are punishable by fine or by imprisonment, or both,
under Section 1001 of Title 18 of the United States Code, and that such willful
statements may jeopardize the validity of the application, any patent issuing there
upon, or any patent to which this verified statement is directed.

Date: 8/10/2004



Christopher B. Weare

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./drivers/p <odd job> <entropyClip> <num>

5/11/00 re: mp3 conference call

why two months?

QA with the dB

areas to cover

1. mp3.com so big

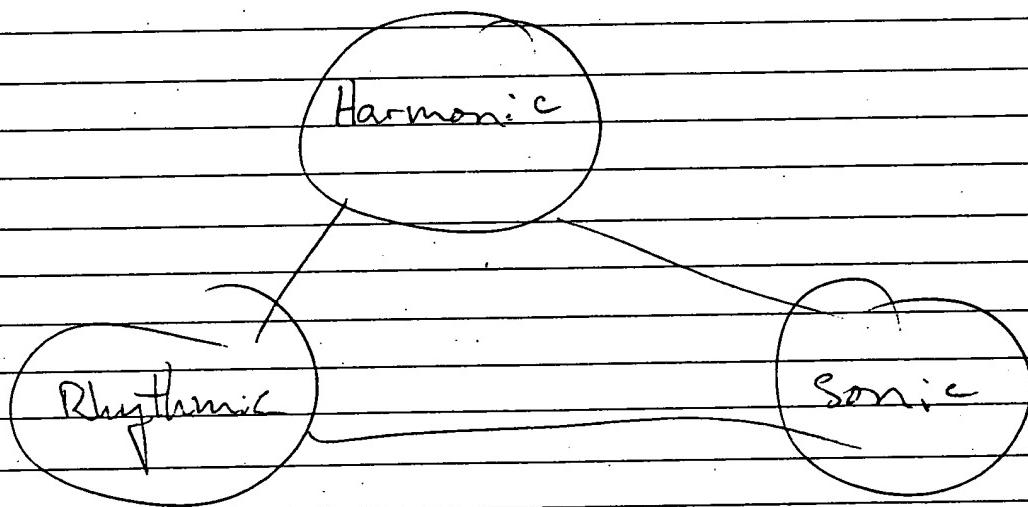
2. no humans! want turnkey

A human → about a card

05-12-00

5/15/00

Three components of the auto-analysis

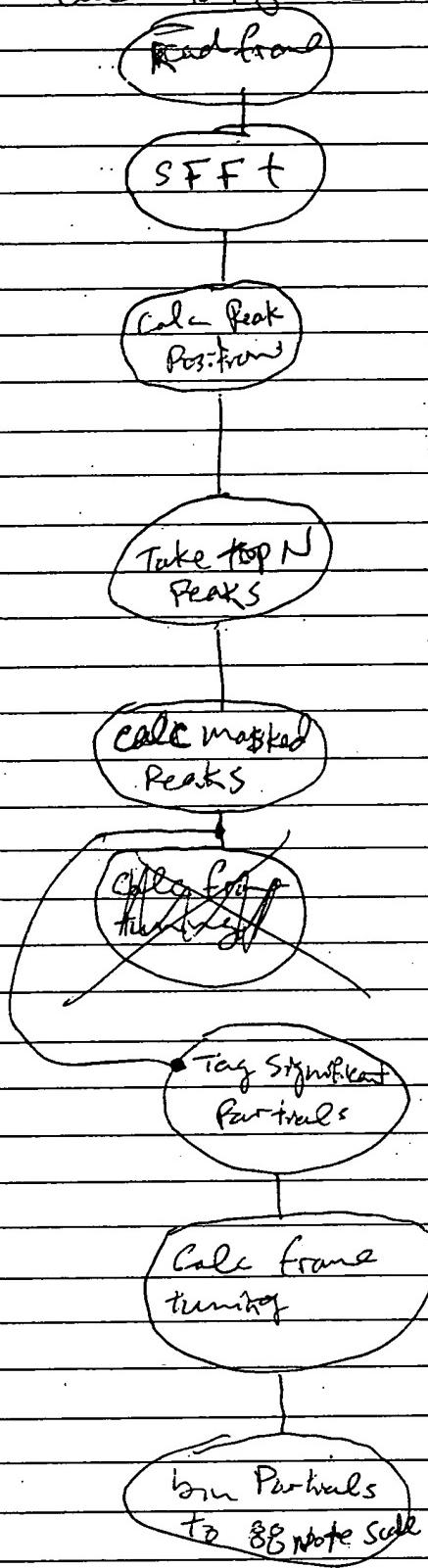


Harmonic is the partial description. Partial are e from the signal via FFT. The partial amplitudes are altered vis à vis Fletcher-Munson curves as well as they are then assigned to notes.

Rhythmic component
Information containing tempo and note onsets

Sonic contains the critical band energy on a frame basis

Calculating the harmonic components



calculating the sonic components

read frame of Data

FFT

~~distances~~
Calc Energy in bin

Calc frame
Entropy

Calc frame
Energy

5/16/00

use neural networks to map parameters to
ground parameters

using newff with 30 hidden layers and 1
output layer we get an std dev for w of 11860
for 4760 elements. I mean br suggest 48 parameters
run again with 50 parameters R = 0.67
for Density we get a 10.4 std with the above
topology, R = 0.593 it seems we need more
10's & 1's. Network is biased towards ~50~60

5/17/00 Train network on weight & Density of first
600 alt-rock songs. R = 0.74 for data
run 601 - 701 thru net yielding an R of
0.946! this shows excellent generalization

Train network for Heavy metal

for 30 epochs we get: R = .714 for ~~Heavy~~ weight
and R = 0.342 for Density

$R = 0.633$ for weight.

Train network with 100 hidden nodes:

$R = 0.804$ for weight

$R = 0.693$ for density

Check generalization:

$R = 0.383$ for weight

$R = 0.438$ for density

Poor generalization.

Add too many neurons and the shot gets poor

Train one nn on all songs with
as an input to the net.

$R = 0.647$ for density

$R = 0.217$ for weight

} 10 training epochs

$$ED \text{ std} = 9.8333$$

$$ED_w \text{ std} = 11.1602$$

5/18/06

Create new data set with:

	1	2	3	4	5	6
608	Genre ID	G Density	G weight	CDensity	Density Std	Weight Std
	1-22	10-100	10-100	1.4-5.3	0.057-11.03	0.58-3.3253

after 20 training epochs $R = .532$ for density
 $Std = 11.58$

after 40 training epochs $R = .614$ for density
 $Std = 11.22$

generalization of net:

$R = 0.501$ for density

$Std = 10.1 \rightarrow$ successful generalization

continue training

after 60 Epochs we get $R = .623$
 11.12 std

good

generalization:

$Std = 10.07$

$R = .504$

run network for HipHop/Rap after 20 epochs:

$R = 0.539$ for Density

$R = 0.633$ for weight

run network with 100 hidden nodes:

$R = 0.804$ for weight

$R = 0.693$ for Density

Check generalization:

$R = 0.883$ for weight

$R = 0.438$ for Density

Poor Generalization

Add too many neurons and the shot gets poopy!

Train one nn on all songs with genre number as an input to the net.

$R = 0.647$ for Density }
 $R = 0.217$ for weight }

10 training Epochs

$$\text{eD std} = 9.8333$$

$$\text{eW std} = 11.1602$$

8/06

Create new data set with:

	1	2	3	4	5	6	7	8	9	10
genre ID	G Density	G weight	C Density	Density Std	C weight	Weight Std	En	En Std	Temp	
-22	10 - 100	10 - 100	1.4 - 5.3	0.057	11.03	0.589	3.3	0.53 - 0.93		
								0.56 - 0.94	1.31 - 2.5	

After 20 training Epochs $R = .532$ for Density

$$\text{std} = 11.58$$

After 40 training Epochs $R = .614$ for Density

$$\text{std} = 11.22$$

generalization of net:

$R = 0.501$ for density

$\text{std} = 10.1 \rightarrow$ successful Generalization

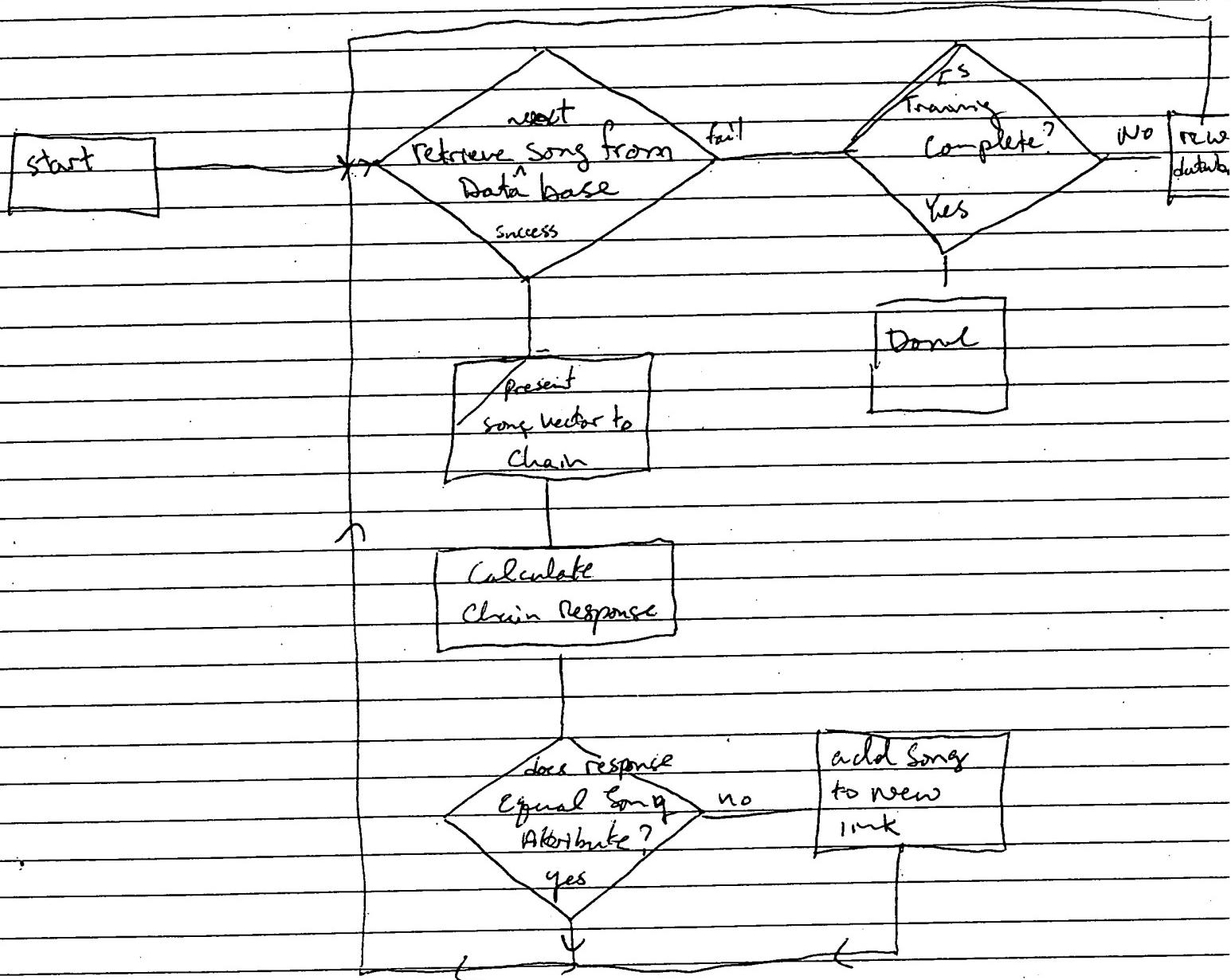
continue training

down

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Classification chain algorithm

5/26/00



mike weiss @ 877-737-5669 6198
 194-10
 203-80
 357 80-30
 689 70-10

4/20 Patent meeting

5/31/00

run classification chain on 400 inputs with
ave class over 3 nearest neighbors

correct: 165 (47.41%) \rightarrow 89.08%

off by 1: 145 (41.67%)

off by 2: 32 (9.20%)

off by 3: 5 (1.44%)

off by 4: 1 (0.29%)

tagged for QA 52 (13%)

run classification on 400 inputs with 21c cells
ave class over 5 nearest neighbors

correct 171 (47.24%) \rightarrow 91.16%

off by 1 159 (43.92%)

off by 2 27 (7.46%)

off by 3 4 (1.10%)

off by 5 1 (0.28%)

tagged for QA 38 (9.5%)

Change std error from 15 to 14

correct 167 (47.31%) \rightarrow 91.5%

off by 1 156 (44.19%)

off by 2 26 (7.37%) \rightarrow 8.5%

off by 3 4 (1.13%)

Tagged for QA 47 (11.75%)

run classification chain on 900 inputs with 2K cells
one class over 3 nearest neighbors

correct: 165 (47.41%) > 99.08%

off by 1: 145 (41.67%)

off by 2: 32 (9.20%)

off by 3: 5 (1.44%)

off by 4: 1 (0.29%)

tagged for QA 52 (13%)

run classification on 900 inputs with 2K cells
one class over 5 nearest neighbors

correct 171 (47.24%) > 91.16%

off by 1 159 (43.92%)

off by 2 27 (7.46%)

off by 3 4 (1.10%)

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off by 3 4 (1.13%)

Tagged for QA 47 (11.75%)

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6/2/00 Human Aided Pitch Classification

- Play Song to groover
- Groover finds Hook
- Groover Hums Hook
- Pitch Class of Hook is extracted via DFT
- information is Encoded in waveform

Michael J Carrasco
Michael Carrasco

6/5/00 1 2 3 4 5 B G

Key; Genre ID, Rating; GD, GW, CD, CDR, EBL, EBI -

⇒ dynamic Time Warping

Integration of Processed data into products

I load training data
load decision tree
load data to be processed
Process data
write data to disk

sv-key, Density, wci

2/00 Human aided pitch classification

- Play Song to groover
 - Groover finds Hook
 - Groover Hums Hook
 - Pitch Class of Hook is extracted via DDP
 - information is Encoded ~~in~~ in midi format

Michael J. Carrasco 8/2/2000
Michael Carrasco

5/100 1 2 3 9 4 5 B 9 30 34 54
Key: Geno ID, Rating: GD, GW, CD-n, CD2n, EB1 - EB24, EBS1 - EBS24

→ dynamic Time Warping

Integration of Processed data into production

I load training data

Load decision tree

load data to be processed

Process data

wrote data to disk

~~Survey, Density, weight-~~